

What Is Claimed Is:

- Sub B1
1. A curable mechanical fastener comprising:
a fastening surface comprising a curable material,
wherein the fastening surface is capable of being repeatedly attached and unattached
5 to a complementary fastening surface, and when attached to the complementary
fastening surface and cured, is capable of becoming permanently attached to the
complementary fastening surface.
- Sub D1
- 10 2. The curable mechanical fastener of claim 1, wherein the curable
mechanical fastener is reclosable for at least one hour after fabrication.
3. The curable mechanical fastener of claim 1, wherein the curable
mechanical fastener is reclosable for at least one month after fabrication.
- Sub A1
- 15 4. The curable mechanical fastener of claim 1, wherein the complementary
fastening surface comprises a curable material.
5. The curable mechanical fastener of claim 1, wherein the curable material
comprises a functionalized-thermoplastic composition.
- 20 6. The curable mechanical fastener of claim 1, wherein the curable material
comprises a combination of at least one thermosettable composition and at least one
thermoplastic composition.
- 25 7. The curable mechanical fastener of claim 6, wherein the thermosettable
composition comprises at least one thermosettable material selected from the group
consisting of (meth)acrylates, urethanes, ethers, epoxies, cyanates, esters, phenolics,
polyimides, amine formaldehyde condensates, and mixtures thereof.
- 30 8. The curable mechanical fastener of claim 6, wherein the thermosettable
composition comprises an epoxy.

5 9. The curable mechanical fastener of claim 6, wherein the thermoplastic composition comprises at least one thermoplastic material selected from the group consisting of polyesters, polyolefins, polyamides, polyethers, polyurethanes, plasticized polyvinyl chloride, thermoplastic elastomer block copolymers, phenoxy resins, polyketones, silicones, polyetherimides, polycarbonates, polysulfones, polyoxides, and mixtures thereof.

10 10. The curable mechanical fastener of claim 6, wherein the thermoplastic composition comprises a polyester.

SUB D17 11. The curable mechanical fastener of claim 10, wherein the polyester is semi-crystalline at room temperature.

15 12. The curable mechanical fastener of claim 6, wherein the thermosettable composition comprises an epoxy and the thermoplastic composition comprises a polyester.

SUB D17 20 13. The curable mechanical fastener of claim 1, wherein the fastening surface comprises a plurality of fastening elements coupled to a backing.

14. The curable mechanical fastener of claim 13, wherein at least one fastening element is mushroom-shaped.

25 15. The curable mechanical fastener of claim 1, further comprising the complementary fastening surface.

SUB D17 30 16. The curable mechanical fastener of claim 1, wherein the curable mechanical fastener is a hook-and-loop mechanical fastener.

17. The curable mechanical fastener of claim 1, wherein the fastening surface

comprises protruding fastening elements and the complementary fastening surface
comprises recessed structures.

18. The curable mechanical fastener of claim 1, wherein the fastening surface
5 is formed by a method selected from the group consisting of extruding, melt-
blowing, molding, and microreplicating.

19. A cured mechanical fastener according to claim 1.

10 20. The cured mechanical fastener according to claim 19, wherein the curable
mechanical fastener is cured using actinic radiation.

21. The cured mechanical fastener according to claim 19, wherein the cured
mechanical fastener has an overlap shear strength of at least about 7 MPa.

15 22. A method of forming a permanent fastener comprising the steps of:
providing a curable mechanical fastener according to claim 1;
attaching the fastening surface to the complementary fastening surface;
and
20 curing the mechanical fastener to provide a permanent fastener.

23. The method of claim 22, further comprising the step of attaching the
curable mechanical fastener to a substrate.

25 24. The method of claim 23, wherein the curable mechanical fastener is
permanently attached to the substrate.

30 25. The method of claim 22, wherein the complementary fastening surface is
part of a curable mechanical fastener, the method further comprising the step of
permanently attaching the curable mechanical fastener comprising the
complementary fastening surface to a substrate.

26. ~~A multi-part curable mechanical fastener, comprising:~~
- ~~a first part comprising a fastening surface;~~
 - ~~a second part comprising a complementary fastening surface that~~
- 5 ~~complements the fastening surface;~~
- ~~wherein at least one of the fastening surface and the complementary fastening~~
- ~~surface is at least partially fabricated from a curable material, such that when the~~
- ~~fastening surface is mechanically attached to the complementary fastening surface,~~
- ~~the multi-part curable mechanical fastener is capable of being cured to provide a~~
- 10 ~~permanent fastener.~~

add C5